

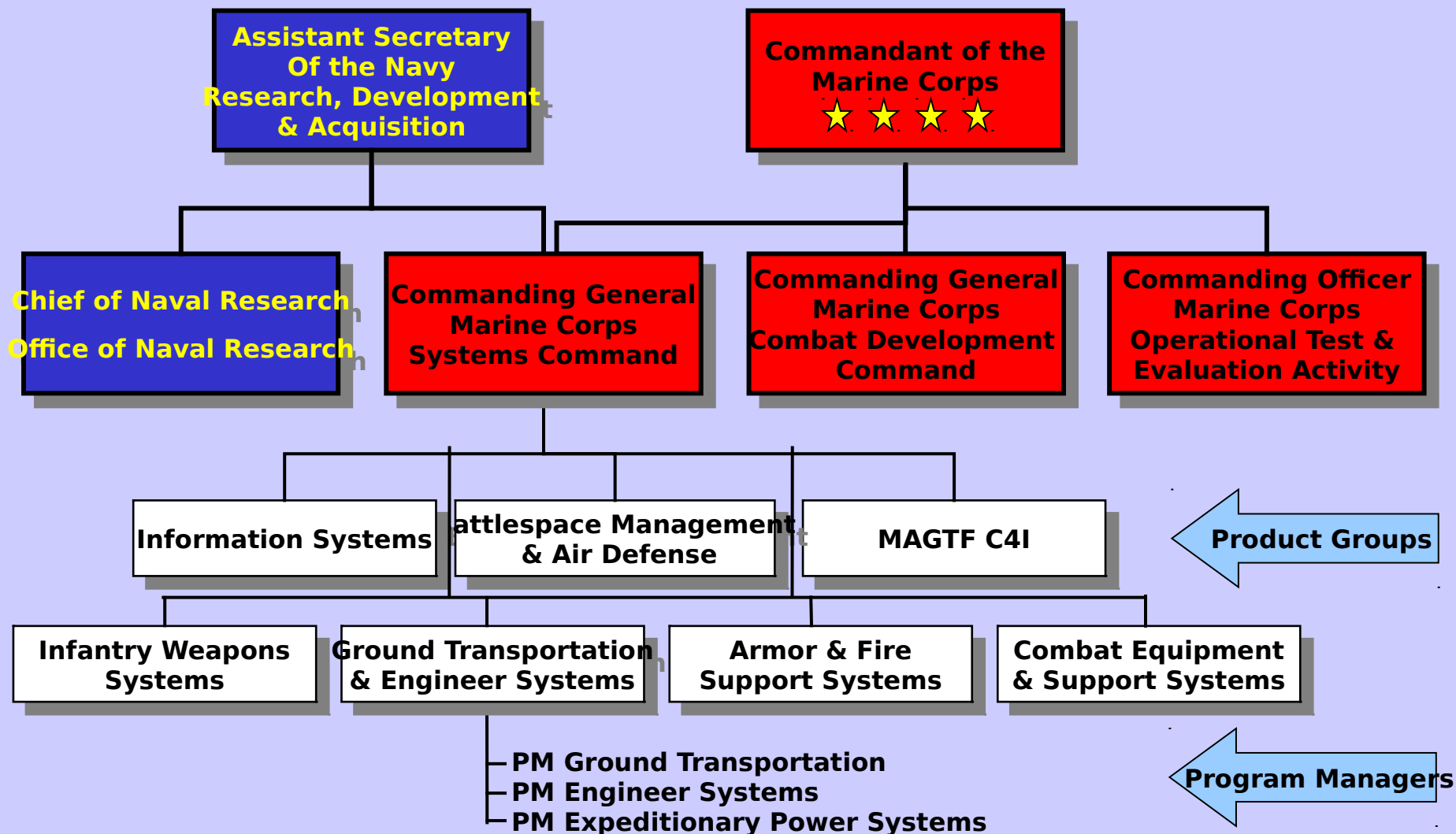
Marine Corps Fuel Cell Efforts



Tri-Service Power Exposition
July 16, 2003

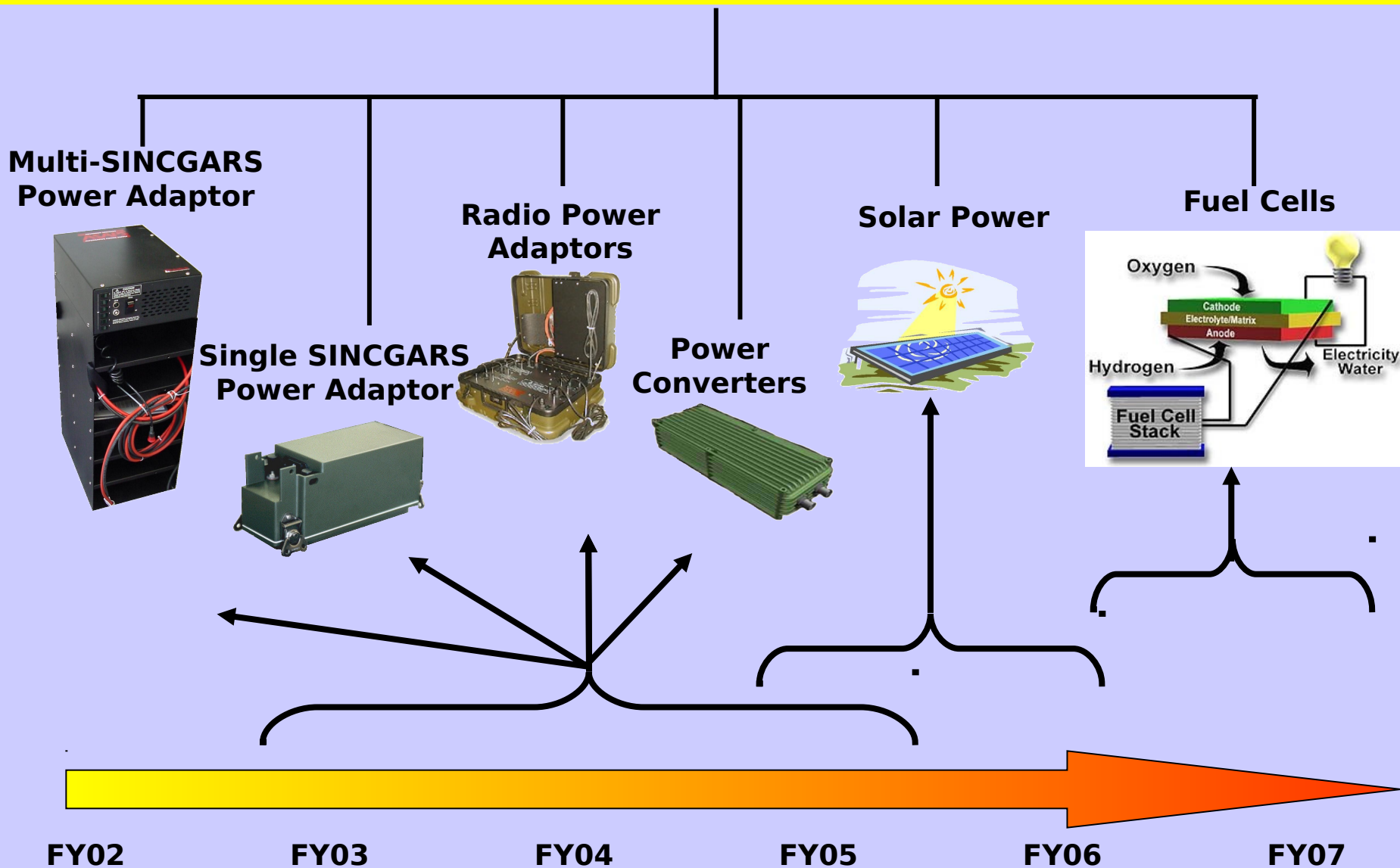


USMC Acquisition



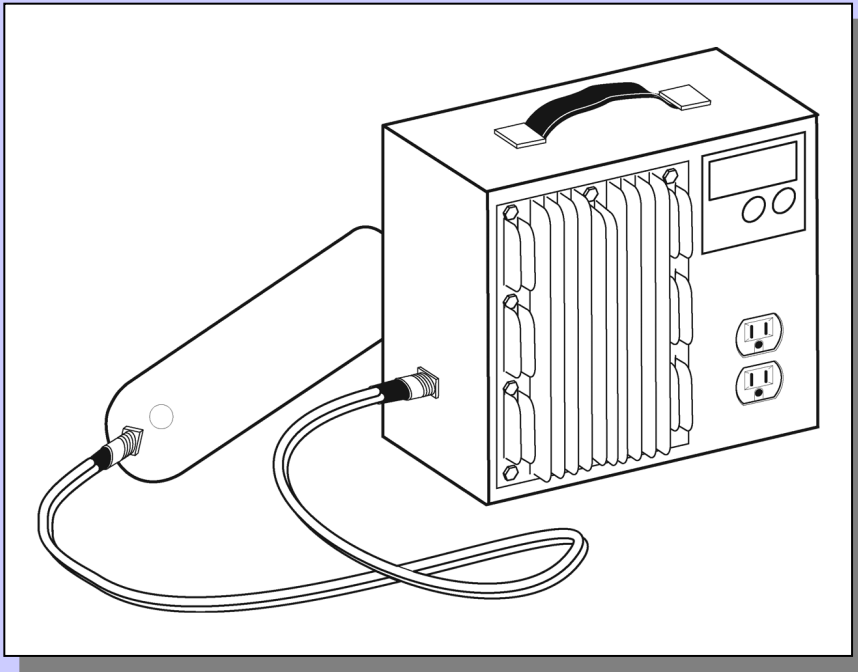


ALTERNATIVE POWER SOURCES FOR COMMUNICATIONS EQUIPMENT (APSCE)





USMC Fuel Cell Efforts



- Requirement under **APSCE**
- **Alternative to Batteries**
- **Past Experimentation**
- **On-Going / Future Efforts**
- **Cooperative Efforts**



Fuel Cell Experimentation



- **Ball PPS-50 and Ball PPS-100 units**
- **Utilized by Marines in 1999 exercise**
- **Powered up retransmission site**
- **2004 experiment with units in Okinawa**



Fuel Cell Program Efforts

- **Program Manager - Intelligence Systems**
 - Procuring and assessing 3 Ball PPS-50 units
 - Working with NSWC-Crane to characterize
 - Will be addressing unique Intel needs and requirements
- **Program Manager - Infantry Weapons Systems**
 - Actively involved with Army PM for Objective Warrior
 - Will perform FY04 power assessment for USMC suite
- **Office of Naval Research - 6.1 Basic Research**
 - Funding University of South Carolina - Power Analysis Tool
 - Model performs system assessment (power throughput)
 - Addressing the ability to perform collective assessment
 - Funding University of Pennsylvania - Direct diesel fueled Fuel Cell
 - Address tolerance of sulfur in fuel



Fuel Cell Future Efforts

- **Small Business Innovative Research Program**
 - **Proposed effort (planned for next SBIR solicitation)**
 - **Address Safety and Transportability of packaged fuel**
 - **Need to meet unique Naval Transport Requirements**
 - **Phase I - Analysis / Design**
 - **Phase II - Build / Test systems**
- **Office of Naval Research evaluation**
 - **Procuring 2 Ball PPS-50 DMFC units**
 - **Will test with USMC operators and tactics - FY04**
 - **Will assess unique USMC factors and issues**



Points of Contact

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